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Merger Performance: The Marriage between SAIL and MEL

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The purpose of the study is to analyse the financial performance of Steel Authority of India Ltd (SAIL) after merger deal with MEL. The financial statements are analysed for pre and post merger five years (2000-2010) by using seven financial ratios. The accounting approach uses accounting measures and productivity measures of financial statements to evaluate the M&A success. In spite of creation limitations, accounting ratios are considered as reliable and convenient for making analysis since financial statements are audited. Ratio analysis is employed as is considered as a convenient technique to make a quantitative analysis of companies' performance. The results show that the financial performance of SAIL in terms of profitability, liquidity and solvency has improved after merger. It indicates that merger deals improve the financial performance of companies. The limitation of the study is that it only focused on the financial aspect of merger but ignores which factor have impacted the deal's success and failure. Study can be made by controlling factors affecting steel industries. It would enable the organizations to have a choice between organic and inorganic growth strategy. Case based research on pre and post merger on steel companies is made which is few as far as knowledge is concerned. This paper is an attempt to look into a specific deal by which it would make deep understanding of merger performance in India.

Keywords: SAIL, MEL, Merger, Acquisition, Financial Performance

Introduction

In today's cut throat competition in rat race race, mergers and acquisitions are the corporate strategies that are used worldwide for getting various benefits like gaining market share, increasing the economies of scale and scope, reducing business risk, cutting costs, increasing revenues, acquiring technological competence and entering new market and geographies. The combining of two or more entities into one, through a purchase acquisition or a pooling of interests is known as the merger (Investorwords.com). The motives of the merger are to gain various types of financial, cost and revenue synergies. The regulatory aspect of companies has changed a lot and M&A deals have increased compared to the pre liberalisation period. Liberalisation has made Indian corporate to face competition from foreign companies which comparatively bigger in size and technological competence. In such circumstances mergers and acquisitions are considered as an important growth strategy to survive and grow.

Review of Literature

In order to understand the impact of M&A deals on the financial performance of the company on acquirer and the target firm's success and failure, literature review has been made M&A studies.

There is evidence from various research studies that shareholders have to face disappointing returns after M&A. There is no positive return from the merger (Meeks, 1977; Mueller, 1980; Chatterjee & Meeks, 1996; Parrino & Harris, 2001; Ghosh, 2001; Sharma and Ho, 2002; Salter and Weinhold, 1979 cited from (Bruner, 2004). The acquirers get return on assets same as control firms in the post acquisition period. Hence, M&As are considered as a strategy that gives no cash outflow or results in Net Present Value of zero worth (Healy, Palepu & Ruback, 1992). The return on assets for acquirers is two per cent lower than for non-acquirers in the post acquisition period (Dickerson, Gibson & Euclid, 1997). The firms occupied in merger transactions are less profitable compared to industry counter firms in terms of various profitability parameters like return on equity, return on asset, and return on sales (Mueller, 1980 cited from Bruner 2004; Singh, 1975 cited from Daga, 2007). There is no improvement in efficiency (Profit margin on sales adjusted for changes in input and output prices) of firm through M&A (Cowling et al, 1980 cited from Daga, 2007). So from the above studies, it is observed that acquirers get a negative return, when they are compared with companies engaged in M&A transactions and companies not engaged in M&A transactions.

Return on capital for acquirers differ from period to period. While there was increased in return on capital for sample period 1975-78, there was a decrease in return on capital employed in 1981-83 sample period (Herman & Lowenstein, 1988). There is post merger improvement of companies involved in mergers. However, this increase is only for those firms that use pooling of

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interest method (Ravenscraft & Scherer, 1989). The performance of the merged firms improves significantly following their combination. Buyers, targets, the combined firms under perform their peers in five years before the merger, and outperform their peers in five years after (Carline et al, 2004). Long term operating performance is positive but insignificant. Operating performance as described by (Rahman & Limmack, 2004) is judged from return on sales and asset turnover . Return on sales is defined as operating cash flow to sales while asset turnover is denied as sales divided by assets. Thus , in the post acquisition period the two parameters increase resulting in improvements in long run operating cash flow performance (Rahman & Limmack, 2004).

Sometimes for same companies involved in M&A may give both positive and negative returns. Operating synergies in terms of extra cash flows are positive and financial synergies in terms of required rate of return are negative after M&A (Seth, 1990). Pautler (2001) made literature survey and found that pre merger and post merger studies provide no clear answers to questions about the efficiency and market power effects of M&As. In case of large scale studies (those used large sample, as viewed by Pautler, 2001) M&A are unsuccessful. There is significant gain to target firms and little or no gains to acquiring firms. Again there are price enhancement and cost reduction in multiple merger cases.

Review of above academic financial and economic literature shows that number of studies has measured the financial performance of companies' pre and post M&A period. Those studies have focused on the impact of the post merger operating and financial performance in short and long run period on shareholder's wealth. The studies have focused on whether mergers and acquisitions are creating value or value destroying in nature for companies. The aim of the M&A studies has been to see whether merger improve efficiency, profitability, liquidity solvency or not and whether M&A deals should be motivated to increase or not. Thus, from the above literature it is concluded that accounting based studies show mixed results. These mixed results may be because of studies made in different countries or using different performance variables or other deal specific factors.

Companies Background

A brief discussion on the background of SAIL (acquirer) and MEL (target) is made below:

Steel Authority of India Limited (SAIL)

The Steel Authority of India Limited (SAIL) is one of the largest steel maker companies in India. It has always remained in the top position among all steel companies in the steel industry. The company is activities are fully integrated to serve as iron and steel maker company. The company is engaged in producing both basic as well as special steels. These steels are utilized for various activities like activities involved in household construction, engineering, power, railway, automotive and defence purposes. This is their secondary objective. The most important goal of the company is to export products. The company remained among the top ten public sector Indian companies by continuously improving its turnover. The core business of SAIL is to manufacture and sell various categories of steel products (Source: CMIE prowess database).

The different products of SAIL are hot and cold rolled sheets and coils, galvanised sheets, electrical sheets, structurals, railway products., plates, bars & rods, stainless steel, other alloy steels (Source: CMIE prowess database). Maharashtra Elektrosmelt Limited (MEL) is a subsidiary company which is under the ownership and management of SAIL. It is

Table 1 Background Details of Acquirer and Target Firm

Particulars	Steel Authority of India Ltd.	Maharashtra Elektrosmelt Ltd.
Industry group	Steel	Ferro alloys
Main product	Finished Steel (Non-Alloy Steel)	Ferro manganese
Ownership group	Central Government - Commercial Enterprises	Central Government- Commercial Enterprises
Entity type	Public Ltd.	Public Ltd.
Incorporation year	1954	1973

Source: CMIE Prowess Database

located in Maharastra. SAIL is a government owned company and is controlled by the Government of India. Around 86 per cent shares of SAIL is held by Government of India (Source: CMIE prowess database).

SAIL produces ample varieties of long and flat steel products. These products get huge orders from consumers both in Indian as well as international market. SAIL has also good distribution network system. It has around thirty seven 'branch sales offices' which are located in around four regions of the country. Apart from it, it has the pride of having twenty five departmental warehouses, forty two consignment agents and twenty seven customer care offices. Not only SAIl has a strong distribution network but also a strong marketing division. This marketing division of SAIl has more than 2000 dealers which works to supply qualitative steel across all parts of the country. SAIL also posses a Research and Development Centre for Iron and Steel (RDCIS) at Ranchi with all required facilities. The sole motive behind the centre is to investigate how to produce qualitative steel and to build up new technologies that would aid the steel industry in producing better quality steel.

The important divisions of SAIl are located in various parts of the country. For example, Bhilai Steel Plant (BSP) that is located in Chhattisgarh, Durgapur Steel Plant (DSP) situated in West Bengal, Rourkela Steel Plant (RSP) placed in Orissa, Bokaro Steel Plant (BSL) located in Jharkhand and IISCO Steel Plant (ISP) situated in West Bengal. Apart from these are the integrated steel plants, there are also some special steel plants like Alloy Steels Plants (ASP) in West Bengal, Salem Steel Plant (SSP) in Tamil Nadu, Visvesvaraya Iron and Steel Plant (VISL) in Karnataka (Source: CMIE prowess database).

Table 2 M&A deals done by Steel Authority of India Ltd

Deals where Steel Authority of India Ltd is the acquirer			
Date	**Deal type**	**Target company**	**Price/Cost swap ratio**
4th January 1999	Merger	Visvesvaraya Iron & Steel Ltd	0
28-Jul-2000	Minority Acquisition	Maharashtra Elektrosmelt Ltd	140
1-Sep-2004	Merger	Indian Iron & Steel Co. Ltd	0
3-Sep-2005	Merger	Neelanchal Ispat Nigam Ltd.	0
29-Oct-2005	Merger	Maharashtra Elektrosmelt Ltd.	1:1.7
21-May-2006	Merger	Rashtriya Ispat Nigam Ltd.	0
31-May-2006	Sale of Asset	Malvika Steel Ltd.	0
15th Jun-2006	Substantial Acquisition	Neelanchal Ispat Nigam Ltd.	0
21st June 2006	Merger	Neelachal Ispat Nigam Ltd.	0
21st June 2006	Merger	Bharat Refractories Ltd.	0
21st June 2006	Merger	M O I L Ltd.	0
12th December 2008	Substantial acquisition	Steel Complex Ltd.	83.8
Deals where Steel Authority of India Ltd is target			
Date	Deal Type	Acquirer Company	Price/Cost swap ratio
8th December 1999	Sale of asset	Proposed	0
3rd February 2000	Sale of asset	Proposed	0
5th March 2000	Sale of asset	Proposed	0
21st April 2000	Sale of asset	Proposed	0
16th March 2001	Sale of asset	S A I L Power Supply Co. Ltd.	3,910.00
13th February 2002	Sale of asset	Bokaro Power Supply Co. Pvt. Ltd.	5,600.00
22nd March 2002	Sale of asset	Bhilai Electric Supply Co. Pvt. Ltd.	940
6th May 2002	Sale of asset	Various Parties	2,000.00
12th April 2006	Sale of asset	Unknown	0
31st May 2006	Minority acquisition	Fiis	1,787.40

Source: CMIE Prowess Database

Maharashtra Elektrosmelt Limited (MEL)

Maharashtra Elektrosmelt Limited was incorporated on 17th April, 1974. The company is located in Maharashtra. The central aim of MEL is to carry out manufacturing activities for producing mild steel, other carbon or spring steel billets/ingots that are derived from iron ore (Source: CMIE prowess database).

If the history of MEL is looked inside, then it would be found that the company has entered many agreements to continuously improve its technology base and improve its production capacity. The company have made deal with Elkem-Spigerverket a/s (ELKEM) of Norway in 1974. It was a technical collaboration agreement for supplying know-how that would used for the smelting furnace and also to supply a range of patented designs and process. For the purpose, around 24, 50,000 shares were taken up by the promoters and 1, 00,000 shares were kept to give to the Development Corporation of Vidarbha Ltd. (DCVL). Then during August 1975 public were offered around 24, 50,000 shares at par. In the year 1985, MEL made another contract with M/s. Uddeholm, a Sweden based company. The collaboration was made for launching new technology in the converter that is required in the process of making steel. A year later during 1986, the company saw its production and turnover were higher at 41,470 tonnes. It managed to get good returns in spite of increase in the cost of power and no supply of qualitative manganese ore. Again the company managed to obtain technical know-how and engineering package from Uddeholm in 1986 (Source: CMIE prowess database)...

SAIL took over MEL as on 1st January 1986. Ltd. MEL became the the subsidiary of SAIL on on 18th October 1986. MEL transferred 82 per cent of its shares to SAIL. The company went for diversification resulting in improvement in the performance of the company. The company expanded into value added products like medium carbon ferro manganese apart from improving its existing products. As on 31st March 1992, SAIL owns 47, 87,935 number of equity shares of MEL. In 1996, 50, 00,000 number of equity shares issued to SAIL (Source: CMIE prowess database).

Merger Background

The merger deal between SAIL and MEL was announced on 29th October 2005 with a swap ratio of 1:1.7. The deal between mergers of MEL with SAIL was completed on June 14, 2011 with the receipt of final order from the Ministry of Corporate Affairs. The following table shows the event dates of the merger event. It has been renamed as Chandrapur Ferro Alloys Plant. Maharashtra Elektrosmelt Limited (MEL) is a 99.12 per cent subsidiary of SAIL.

Table 3 M&A deals done by Maharashtra Elektrosmelt Ltd

Deals where Maharashtra Elektrosmelt is a target			
Date	Deal type	Acquirer company	Price/Cost swap ratio
29th October 2005	Merger	Steel Authority of India Ltd.	1:1.7
28th July 2000	Minority Acquisition	Steel Authority of India Ltd.	140

Source: CMIE Prowess Database

Table 4 Event dates of the merger event between SAIL and MEL

Event Date	Event Name
29th October 2005	First media announcement
18th May 2006	Cabinet Clearance
25th May 2006	Acquirer Company Board meeting
15th April 2010	Merger Date w.e.f
10th June 2011	Government Clearance
13th July 2011	Deal Completed
30th September 2011	Date of Allotment

Source: CMIE Prowess Database

The merger benefits are discussed in following points:

- The merger of MEL with SAIL is anticipated to support the growth and expansion of MEL and also related investments which are linked with various requirements of SAIL in relation to ferro-alloy.
- SAIL is also looking for different opportunities so as to establish a captive power plant with appropriate capacity by making a joint venture agreement with MEL. The plant would be based on the location within the MEL plant area. The purpose for setting up such plant is to produce cost-effective ferro-alloys.

Research Methodology

The research is carried out by following ways:

Research Objective

The aim of the study is to find out whether the merger of manufacturing companies improves the performance or not. Thus the following objectives are framed in the study:

- To evaluate out the liquidity position of SAIL, MEL and the combined firm in the post merger period
- To find out the profitability position of SAIL, MEL and the combined firm in the post merger period
- To access the solvency position of SAIL, MEL and the combined firm in the post merger period
- To observe the operating efficiency of SAIL, MEL and the combined firm in the post merger period

Hypothesis

Based on the review of literature made and in order to fulfil the main objective of the study, following hypothesis has been formulated:

H_o: Post merger performance improves after the merger

H_a: Post merger performance does not after the merger

Sample

SAIL is chosen as the sample for this study.

Sample Period

The sample period is from 2000 to 2010. 2005 is considered as event year as the impact of merger starts from the date of the announcement of the merger.

Source of Data

The database, Centre for monitoring Indian Economy (CMIE) Prowess is used to collect the secondary data of the two companies that includes the financial statements like profit and loss account items, Balance sheet items, cash flow statement items.

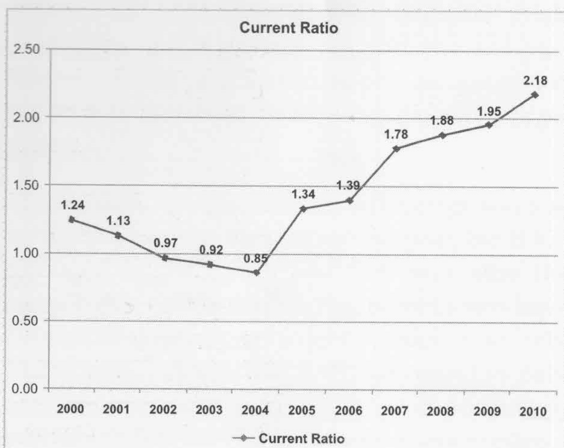
Tool and Technique

Ratios are used as to evaluate the current and potential companies' performance to know whether companies are profitable or not than the competitors, the company efficiently uses its assets, enough cash and liquidity assets to meet its current liabilities, it is generating an accepted rate of the return for shareholders, it has the ability to pay long term debt. Thus, ratio analysis is used after data are collected from the financial statements. For this purpose, profitability ratios, liquidity ratios, solvency ratios have been chosen to evaluate the performance since they are considered as the most reliable and efficient ratios to check performance of companies. Since real effects of the merger are seen in the long term period when companies have enough time for integration and implementation of merger, so five year average of the pre and post merger year has been taken for data analysis.

Results and Discussions

With the help of financial data available in the audited statements of SAIL and MEL, financial ratios are calculated from 31st March 2000 to 31st March 2010.

Chart 1 Pre and Post Merger Current Ratio



The combined firm's performance has improved in terms of the current ratio. There is a rise in the current ratio of the company after 2005 indicating that the merger has increased the liquidity of company by improving the ability of the company to meet its maturing obligations. More liquid assets might be kept intentionally to use the liquid funds for expansion purpose. As per the plans of SAIL, it plans to invest around Rs.1500 crore in expanding capacity and putting up a power plant. There is a chance of building up a captive power plant (investing around Rs 1200 crore) with the help of joint venture inside the MEL so as to cost-effective ferro-alloys.

The post merger quick ratio has improved compared to the pre merger period. Even though in the first year after the merger there was a fall in the quick ratio of the company but after that there has been an increase in the quick ratio. A quick ratio of 1:1 is the standard norm for evaluating the accuracy of the information pertaining to going concern solvency of a business. In post merger period, the company is able to maintain the norm which was below one in pre merger case. The quick ratio is even more than the standard norm 1:1 may be because the company plans expansion of business that might require more of quick assets.

The net working capital by sales ratio has improved in the post merger period compared to the pre merger year. There is a steady rise in the net working capital/sales ratio (NWCS) during the five years after the merger took place. It indicates that the degree of efficiency in the use of short term funds has improved to generate higher sales.

Chart 2 Pre and Post Merger Quick Ratio

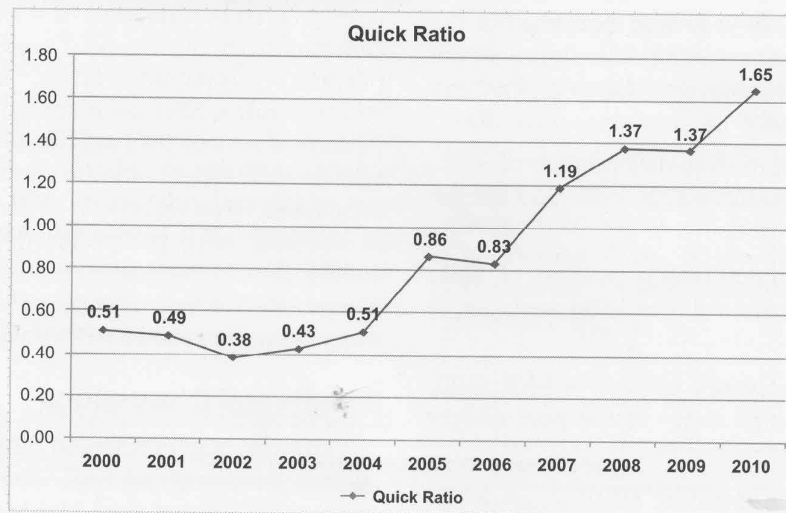


Chart 3 Pre and Post Merger Net Working Capital by Sales Ratio

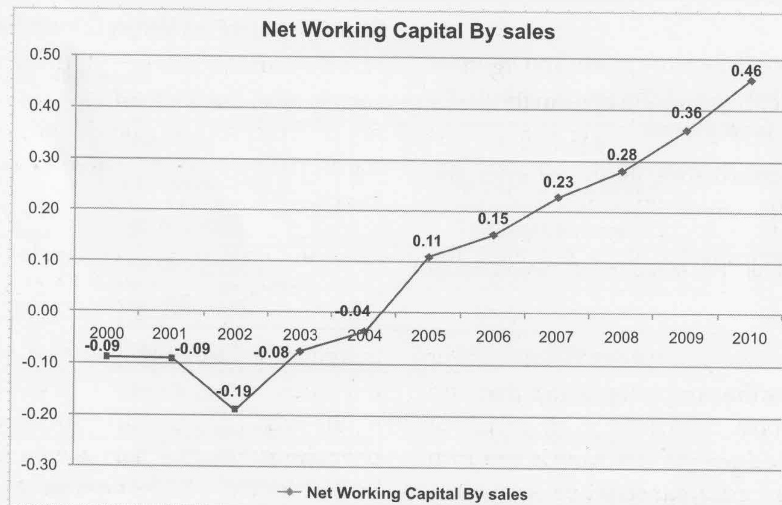


Chart 4 Pre and Post Merger Return on Capital Employed Ratio

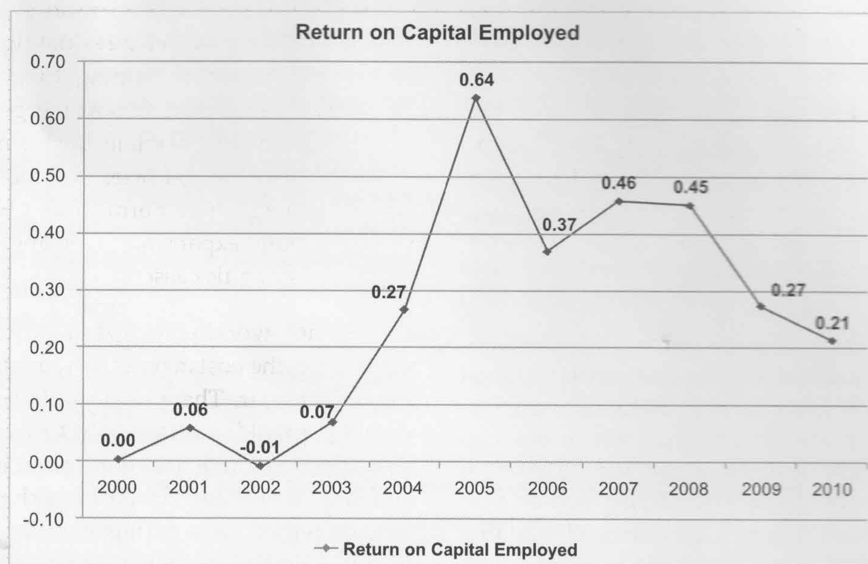
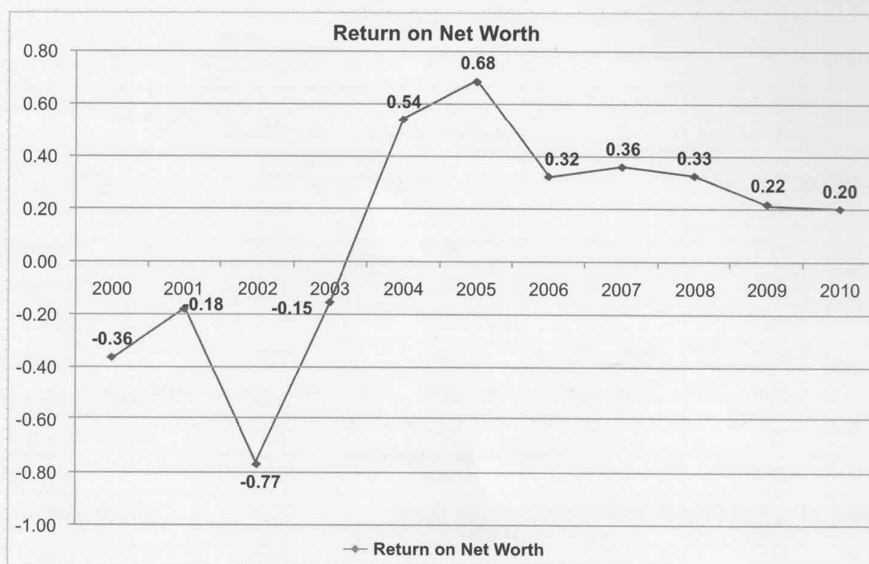


Chart 5 Chart 4 Pre and Post Merger Return on Net worth Ratio



The company has been utilising the shareholders fund to the optimum level in the event year of merger but in the post merger years it has failed to deliver good returns. In the second year after the merger the return on capital employed increased compared to the pre merger second year, but then the return has decreased in the five years in post merger year.

The return on net worth improved in the merger year but declined in the post merger first year and improved in the post merger second year, but afterwards it has declined in 3rd, fourth and fifth year. The declining performance might have been affected in 2008-2009 due to financial crisis worldwide. But if is compared with pre and post first and second year, then in the post merger period the RONW has been better than the pre merger period.

The combined firm's financial leverage was low up to three years in the post merger year, but it has increased in the fourth and fifth year after the merger. The reason may be that other factors have influenced the company's debt position. Low debt equity ratio indicates that SAIL has repaid its debt over the years and is in a very good position to borrow funds or debt for its future expansion plans.

Chart 6 Pre and Post Merger Total Debt Ratio

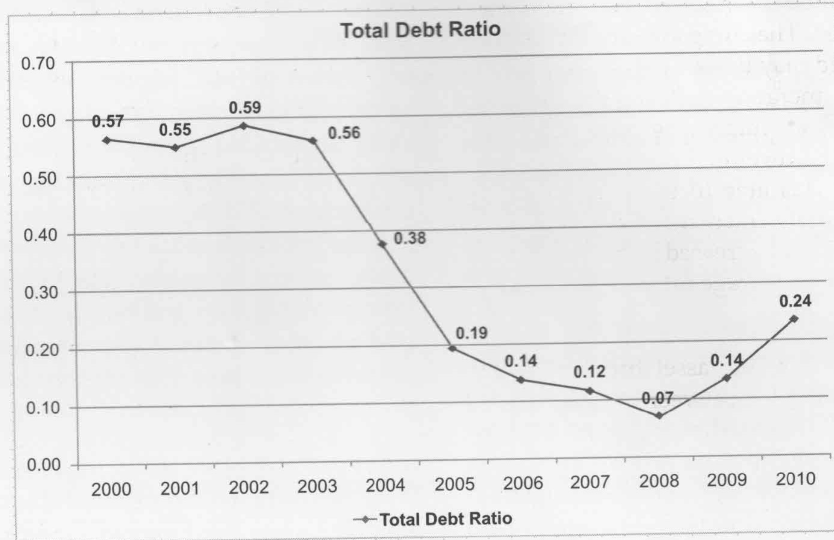


Chart 7 Pre and Post Merger Interest Coverage Ratio

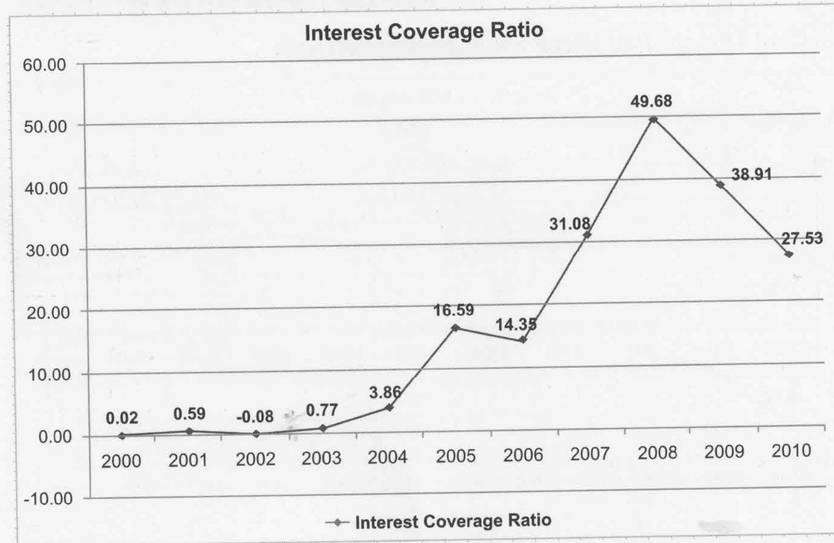
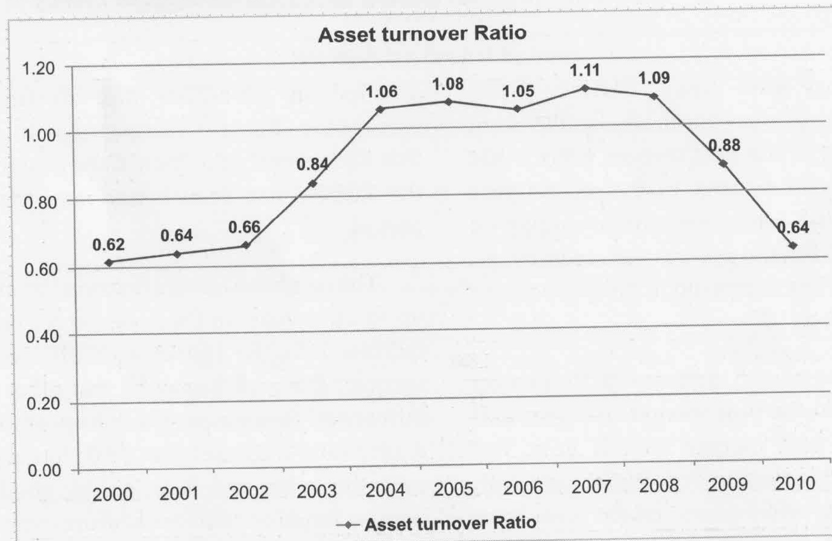


Chart 8 Pre and Post Merger Asset Turnover Ratio



post merger first year the interest coverage ratio has declined, even though it has been better than the pre merger first year. The company's ability to pay its debt has declined may be because it has been in the initial year of merger which needs time for integrating activities and improving performance to pay back the debt. However in the second and third year the company was able to meet its financial charges by paying off the interest or fixed expenses. As the total debt ratio has increased in the fourth and fifth year, the interest coverage ratio has decreased in the same years.

As it is known that the asset turnover ratio exhibits the relationship between the revenue earned and the total assets of the company, a higher asset turnover ratio indicates that the company's total asset has been properly utilised to generate sales or earn revenues. The asset turnover ratio decreased in the first year after the merger and then it has increased and after three years again it has decreased. It means that the company's profit margin improved in the initial year with the synergistic effects of merger and then in the second year the profit margin was lower due to both companies took time for adjusting to the merger, but afterwards the company's profit margin was higher thus with higher asset turnover ratio.

The following table depicts the pre and post merger company performance with explanations below it:

Stage1: Without Industry adjusted Returns (or Without Control/Comparable Firms)

The comparison of pre and post merger liquidity performance ratios for the acquirer, target, and the combined firm showed that there is an increase in the current ratio, quick ratio and net working capital ratio in the post merger period. The post merger profitability improved in both ROCE and RONW positively. The debt reduced while the debt paying capacity increased which is reflected in a decrease in total debt ratio and increase in interest coverage ratio. The turnover also increased in average in a post merger year.

Table 5 Five Year Average Pre and Post Merger Financial Performance

Financial Ratios	Steel Authority of India Ltd	Maharashtra Elektrosmelt Ltd	Combined Firm	Industry Median	Difference
Pre Current Ratio	1.03	0.64	1.02	2.08	-1.06
Post Current Ratio	1.84	1.34	1.84	2.35	-0.52
Difference	0.81	0.70	0.82	0.27	0.55
Pre Quick Ratio	0.47	0.25	0.46	1.21	-0.75
Post Quick Ratio	1.29	0.69	1.28	1.29	-0.005
Difference	0.82	0.44	0.82	0.08	0.74
Pre Net Working Capital/Sales	-0.10	-0.19	-0.10	0.07	-0.17
Post Networking Capital/Sales	0.30	0.10	0.30	0.09	0.20
Difference	0.39	0.29	0.39	0.02	0.35
Pre Return on Capital Employed	0.08	-0.57	0.08	0.06	0.02
Post Return on Capital Employed	0.35	0.51	0.35	0.11	0.24
Difference	0.27	1.07	0.27	0.05	0.22
Pre Return on Net Worth	-0.18	-107.14	-0.19	0.06	-0.25
Post Return on Net Worth	0.29	0.33	0.29	0.10	0.19
Difference	0.47	107.48	0.47	0.04	0.43
Pre Total Debt Ratio	0.53	0.38	0.53	0.36	0.17
Post Total Debt Ratio	0.14	0.01	0.14	0.35	-0.21
Difference	-0.39	-0.37	-0.39	-0.01	-0.04
Pre Interest Coverage Ratio	1.04	0.04	1.03	1.65	-0.61
Post Interest Coverage Ratio	32.14	2391.18	32.31	2.19	30.12
Difference	31.11	2391.15	31.28	0.54	30.74
Pre Asset Turnover Ratio	0.76	2.04	0.76	1.24	-0.48
Post Asset Turnover Ratio	0.95	1.70	0.95	1.36	-0.40
Difference	0.19	-0.33	0.19	0.12	0.05

Stage2: With Industry adjusted Returns (or With Control/Comparable Firms)

The combined performed better than the industry in terms of liquidity. This indicates the firms who have not used merger strategy have not done well in terms of three ratios used for liquidity. On average, the acquirer have performed well in terms of profitability compared to those in industry who have not gone for any M&A deals. The merger has led to financial synergy which is reflected in the increase in debt ratio and increase in the interest coverage ratio, an average of five years in pre and post merger years.

Conclusion

This study is conducted to find out the profitability, liquidity, solvency, the operating efficiency of SAIL after merger deal with MEL. The results of the study showed that, there is a different impact of merger on different financial performance parameters. Out of the eight ratios, on average of five years all ratios showed favourable performs before and after the merger, by considering both with and without the industry adjusted returns. But if we look year specific results, then return on capital employed, return on net worth, interest coverage ratio, asset turnover ratio have declined and total debt ratio has increased in the post merger fourth and fifth year. The reason may be that the impact of merger doesn't remain during the long years as other players adopt the same strategy or many other factors have influenced other than a merger during this year.

Limitations

There are certain limitations of this study. The main limitation of this study is the lack of financial data. Another drawback of the study is that it only focused on the financial aspect of merger but ignores which factor have impacted the deal's success and failure. There might be certain inherent limitations of accounting approach.

Future Scope of Study

Future research in such area can be made to understand the impact of merger and acquisition by taking M&A deal done in other sector like banking and financial institutions. The same work can be extended by taking into account the industry average returns based on all steel companies and then comparing the performance. It means the performance of steel companies who have gone for the M&A deal (inorganic strategy) and who have not gone for the M&A deal (organic strategy). The study can be extended by taking into consideration various factors other than mergers and acquisitions that influence the performance of steel companies like global recession, availability of finance, cost structure, level of competition-concentration in different geographies, market position-market share and the customer profile, product mix-commodity and value added products, production cycle, rising energy cost, supply and demand, supply of raw materials, technology-cost cutting/competitive, investment in R&D-innovations, and labour productivity.

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Table: Pre and Post Merger Performance of SAIL

t-Test: Paired Two Sample for Means	Pre Current Ratio	Post Current Ratio	Pre Quick Ratio	Post Quick Ratio	Pre Net Working Capital/Sales	Post Networking Capital/Sales	Pre ROCE	Post ROCE	Pre RONW	Post RONW	Pre Total Debt Ratio	Post Total Debt Ratio	Pre Interest coverage ratio	Post Interest coverage ratio	Pre Asset turnover ratio	Post Asset turnover ratio
Mean	0.90	1.67	0.39	1.09	-0.13	0.23	-0.14	0.40	-35.84	0.30	0.48	0.10	0.70	818.55	1.19	1.20
Variance	0.05	0.08	0.02	0.12	0.00	0.01	0.14	0.01	3813.43	0.00	0.01	0.01	0.33	1854 893.38	0.54	0.19
Observations	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Pearson Correlation	1		1		1		-1		-1		1		-1		1	
Hypothesised Mean Difference	0		0		0		0		0		0		0		0	
df	2		2		2		2		2		2		2		2	
t Stat	-20.03		-5.46		-10.06		-2.03		-1.01		66.24		-1.04		-0.09	
P(T<=t) one-tail	0.00		0.02		0.00		0.09		0.21		0.00		0.20		0.47	
t Critical one-tail	2.92		2.92		2.92		2.92		2.92		2.92		2.92		2.92	
P(T<=t) two-tail	0.00		0.03		0.01		0.18		0.42		0.00		0.41		0.94	
t Critical two-tail	4.30		4.30		4.30		4.30		4.30		4.30		4.30		4.30	

Source: Calculated and Evaluated

i - Acknowledgement - The variable definitions are taken from my Phd thesis (on going research work at VGSOM IIT Kharagpur) entitled "Post Merger and Acquisition Performance: A Study with Reference to Manufacturing Companies in India.